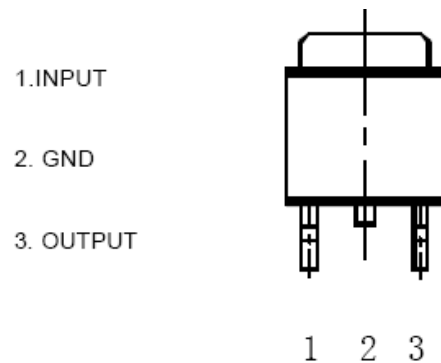


## Three-terminal positive Voltage Regulator BL78D05

### FEATURES

- Output Current in Excess of 1A
- Output Voltage is 5V
- Internal thermal Overload protection
- Internal Short Circuit Current Limiting

### PIN CONNECTION



### ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Characteristics	Symbol	Value	Unit
Input Voltage	$V_i$	35	V
Thermal Resistance Junction-Case	$R_{\theta JC}$	10	°C /W
Thermal Resistance Junction-Air	$R_{\theta JA}$	93	°C /W
Operating Temperature	$T_{opr}$	-40 ~ 85	°C
Storage Temperature Range	$T_{stg}$	-55 ~ 150	°C

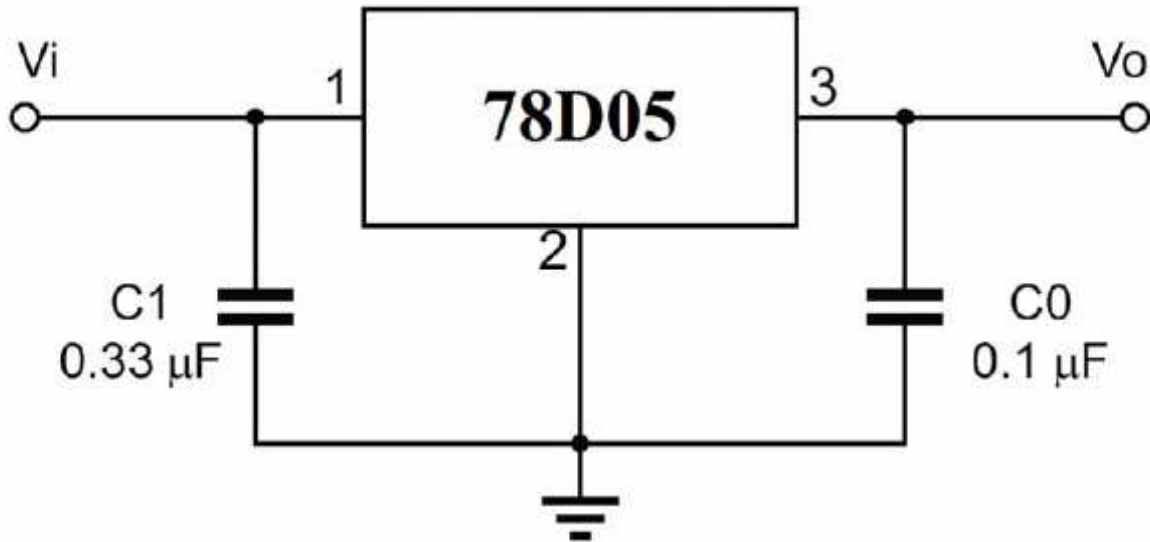
### ELECTRICAL CHARACTERISTICS

(unless otherwise noted,  $V_i=10V, I_o=500mA, -40^{\circ}C < T_j < 85^{\circ}C, C_1=0.33\mu F, C_o=0.1\mu F$ )

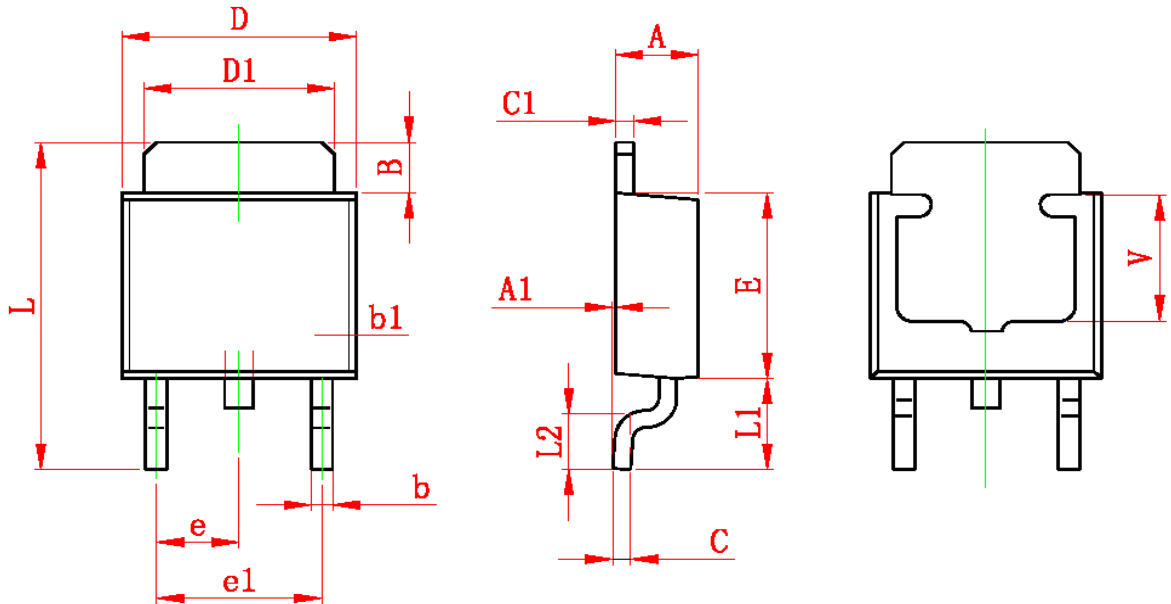
Characteristics	Symbol	Test Conditions	Min	Typ	Max	Unit	
Output Voltage	$V_o$	$T_j=+25^{\circ}C$	4.9	5.0	5.1	V	
		$5.0mA \leq I_o \leq 1.0A, P_o \leq 15W$ $V_i=7V$ to 20V	4.85	5.0	5.15		
Line Regulation*	Regline	$T_j=+25^{\circ}C$	$V_i=7V$ to 25V		4.0	100	mV
			$V_i=8V$ to 12V		2	50	
Load Regulation*	Regload	$T_j=+25^{\circ}C$		25	100	mV	

			$I_o=250\text{mA to }750\text{mA}$		10	50	
Quiescent Current	$I_Q$	$T_J=+25^\circ\text{C}$			5.0	8.0	mA
Quiescent Current Change	$\Delta I_Q$	$I_o=5.0\text{mA to }1.0\text{A}$			0.03	0.5	mA
		$V_i=8\text{V to }25\text{V}$			0.3	1.3	
Output Noise Voltage	$V_N$	$f=10\text{Hz to }100\text{KHz}, T_A=+25^\circ\text{C}$			40	200	$\mu\text{V}/V_o$
Ripple Rejection	RR	$f=120\text{Hz } V_i=8\text{V to }18\text{V}$		56	73		dB
Dropout Voltage	$V_{\text{Drop}}$	$I_o=1\text{A}, T_J=+25^\circ\text{C}$			2		V
Short Circuit Current	$I_{\text{SC}}$	$V_i=35\text{V}, T_A=+25^\circ\text{C}$			230		mA
Peak Current	$I_{\text{PK}}$	$T_J=+25^\circ\text{C}$			1.6		A

### APPLICATION CIRCUIT



\*Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

**OUTLINE DRAWING**
**TO-252**
**Unit:mm**


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300 TYP		0.091 TYP	
e1	4.500	4.700	0.177	0.185
L	9.500	9.900	0.374	0.390
L1	2.550	2.900	0.100	0.114
L2	1.400	1.780	0.055	0.070
V	3.80 REF		0.150 REF	